Reifying Identity to Support a Community of Practice
Research Proposal
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Motivating this Research
• “Your home page is a projection of your professional persona—a way for people to know who you are as a member of the profession.” (Agre, 2003)
• “Personal pages and the world wide web are not being used to ‘publish information;’ they are being used to construct identity—useful information is just a side effect.” (Erickson, 1996)
• My Personal Home Pages (5 since ’95)

Overview
• Introduction
  – Thesis Statement
  – Research Questions
• Background
  – Context (CoC at Georgia Tech)
  – Method (Design Experiments)
  – Motivation (AniAniWeb, Communities of Practice)
• Completed Work
• Proposed Work
  – Questions / Data Sources

Introduction: Background: Completed Work: Proposed Work
Learning Beyond Practice Fields

- “There are no clear boundaries between the development of knowledgeable skills and the development of identities; both arise as individuals participate and both become central to the community of practice.” (Barab and Duffy, 2000)
- Communities of Practice (Lave and Wenger, 1991; Wenger, 1998)
- Learning as doing (engaging in meaningful practice), experience (understanding meaning), becoming (identity) and belonging (community)

Participation & Reification

- Two fundamental, complementary processes of communities of practice
  - Participation: how members of a community interact with others and how they view themselves in relation to that community.
  - Reification: how artifacts and tools are used by the community and how they reflect the practices of the community
- New technologies offer new avenues for reification

Reifying Identity

- Definition
  - The process of creating and distributing artifacts that present the identity of their creators to their community of practice (themselves included)
- Two crucial parts
  - Constructing artifacts: identity construction
  - Distributing artifacts: publication
Reifying Identity in Personal Home Pages

- Personal home pages have potential
  - Publication is nearly free
  - It is a flexible medium that is still evolving
- Yet, the state of web pages leaves much to be desired. Some of these reasons are technical:
  - Content creation is not guided
  - Publication is awkward
  - Interaction is not facilitated
- “The best way to predict the future is to invent it.”
  - Alan Kay

Thesis Statement

- Personal home pages, as identity construction and publication tools, can complement the practices of a community to better support learning as becoming and belonging.
- By closely examining how collaborative personal home pages can contribute to learning as becoming and belonging in the specific setting of academia (more specifically, in the CoC at Georgia Tech), we hope to shed light on the role of identity construction and publication tools in supporting a community of practice.

BIG Research Questions

- How can the artifacts people construct and disseminate support learning as becoming and belonging?
  - Change over time
- How do people reify their identity in a community of practice?
  - Supporting their functions with features
- What are the essential tensions in reifying identity in a community of practice?
  - Thick descriptions of the tensions in action
  - How can people be supported in navigating them?
- What is (can be) the role of personal home pages?
Background

- Context of Study
- Three Complementary Threads
  - Design experiments: research method
  - AniAniWeb system: the instrument for conducting the design experiment
  - Communities of practice: framework for situating the research and understanding the findings
- Identity pulls these threads together

Context of the Study

- Ph.D. students in the College of Computing
- Theoretical reasons
  - Strength of the community of practice
  - Strong need to reify identity in the community of practice
  - Ability to be early-adopters of technology
- Practical reasons
  - Personal home pages are already established
  - Ease of access
  - Familiarity with the community (participant observer)

Design Experiment

- An engineered intervention, motivated by learning theories, that seeks to both understand how people learn and improve that learning (Brown, 1992)
- What does that mean for this research?
  - Study the learning environment as is (with the intent to improve it)
  - Create an intervention (AniAniWeb) to improve and further study it
  - Iteratively, improve the intervention and the understanding of the learning that occurs
- Research needs a minimal ontology for certain types of learning to occur (Barab and Squire, 2004)
Differences with Brown’s Design Experiments

- Beyond the laboratory vs. beyond the classroom
- “…I conduct what Collins (1992) refers to as design experiments…As a design scientist in my field, I attempt to engineer innovative educational environments and simultaneously conduct experimental studies of those innovations. This involves orchestrating all aspects of a period of daily life in classrooms…” (Brown, 1992, p. 141)
- Research needs a minimal ontology for certain types of learning to occur (Barab and Squire, 2004)

AniAniWeb as Instrument: Music and Violin

- Western music and the violin evolved iteratively together (Boesch, 1997)
  - The affordances of the violin affected music
  - Changes, whether small or big, changed the affordances of the violin
- In this research, we are trying to study both the music (identity construction, becoming and belonging) and the instrument (personal home pages) as they evolve together.
- In either case, the target and the journey towards that target are equally important.

AniAniWeb

- Instrument for the design experiment
- A better personal home page system
  - Influenced by other systems: static HTML pages, WikiWikiWeb, CoWeb, and Blogs
  - Incorporating the best practices
  - Extending static personal home pages with
    - Collaboration
    - Ease of editing and organization
AniAniWeb: collaborative personal home pages

- AniAniWeb: a third web approach
  - WorldWideWeb: creator and viewers
  - WikiWikiWeb: all creators
  - AniAniWeb: an owner and other participants

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AniAniWeb: Takeaways from CoWeb

- CoWebs are collaborative websites for groups
  - Based on the WikiWikiWeb
  - Widely used at Georgia Tech CoC
- Quick is good
- Security is about social context as much as it is about protection
- Users will invent different usages and we can adapt the system to be better for those usages
AniAniWeb: Influence of Blogs

- Blogs are probably the most successful form of personal home pages out there
- They remediate the personal diary into the most public of functions (Mortensen, 2002)
- Time is used as the major basis for organization

Communities of Practice

- A useful framework to understand the interaction between individuals, their social relations, and the environmental context
- “Communities of practice are an integral part of our daily lives. They are so informal and so pervasive that they rarely come into explicit focus, but for the same reasons they are also quite familiar.” (Wenger, 1998, p. 7)
- Difficult to study in laboratory conditions (Lave, 1997)

Identity in Practice (Wenger, 1998, p. 149)

- Negotiated experience: we define who we are by the ways we experience our selves through participation as well as by the ways we and others reify our selves.
- Community membership
- Learning trajectory
- Nexus of multi-membership: we define who we are by the ways we reconcile our various forms of membership into one identity.
- Relation between the local and the global
Completed Work: Static Personal Home Pages

• Design experiment
  – Study the learning environment as is (with the intent to improve it)
• Data source
  – On-line survey of 1st year Ph.D. students in the College of Computing at the end of year one
  – Collected last year
  – Similar experiences, so the results can be examined by reported adoption rate

Static Personal Home Pages: Outcome

• Proof of concept
  – Personal home pages are being used to support the professional community of practice
  – Work-related use scores highly
  – Useful to colleagues, more than friends and family
  – Useful to self higher with use
• Improving personal home pages
  – Role of collaboration
  – Role of better editing

Completed to Proposed Work

• The completed work shows
  – Proof of concept that this line of inquiry is viable
  – How we can better support it
• The proposed work allows us to
  – Actively explore the learning and how it can be supported by designing a system
  – Situate the work to contextualize the understanding for others
  – Situate the meaning of personal home pages in their larger context
Proposed Work:
3 Categories of Questions

• Situating questions
  – How do graduate students become members of their community of practice? How does reification and participation work into this?
  – What is the community about? What is the culture of the community?

• Reifying identity questions
  – How do people in this community create and distribute artifacts that present who they are to their community of practice?
  – How can they be supported in this?

• Personal home page questions
  – How can personal home pages help people reify their identity?

Reifying Identity Questions

• Learning as becoming though reifying identity
  – What are the different forums through which graduate students reify their identity in their community of practice?
  – How do these forums compare, with regard to their affordances for becoming (collaboration, etc.) a member of the community of practice?

• Learning as belonging through reified identity
  – How do faculty members perceive the identity of students through the artifacts the students create?
  – How do students perceive their fellow students through the artifacts they have created?

• Learning to reify identity
  – How do graduate students learn to reify their identity?

Personal Home Page Questions

• Adoption
  – What are the technical and social reasons that graduate students chose to or chose not to use personal home pages?
  – What can be done to improve adoption rate?

• Use
  – For what purposes do graduate students use home pages?
  – For what activities do graduate students use home pages?
  – How does usage of personal home pages vary over the different phases of joining the academic community of practice?
Essential Tensions Questions

- Essential tension: conflicting needs that drive a system and need to be balanced, not minimized
- What are the essential tensions in reifying identity?
  - Personal vs. professional (Erickson, 1996)
  - Multiple vs. singular (Turkle, 1995)
  - Private vs. public (Mortensen and Walker, 2002)
  - Others? Messy vs. polished
- How can the navigation of those tensions be supported?

Data Sources

- First survey
  - How do students entering into a community of practice use and think about their personal home pages?
- Second survey
  - Affordances of different forums
  - Changes over time
- Observed usage
- Student and faculty interviews
- Design sessions
  - Co-participant design; going beyond

Completion Schedule

- 7 May 2004: Proposal
- May-June 2004: Collect and analyze faculty interviews, Create second survey
- July-August 2004: Collect second survey, Finish the background chapter, Update AniAniWeb, Start conducting student interviews
- September-October 2004: Conduct student interviews
- October-December 2004: Analyze and write-up student interviews, Conduct design sessions
- January-March 2005: Write-up results from design sessions, prepare defense of research
- April 2005: Defense of research
Contributions

• How can the artifacts people construct and disseminate support learning as becoming and belonging?
• How do people reify their identity in a community of practice?
• What are the essential tensions in reifying identity in a community of practice?
  – Thick descriptions of the tensions in action
  – How can people be supported in navigating them?
• What is the role of personal home pages in this endeavor?

Acknowledgements

• Committee
  • Georgia Tech LST community
    – Andrea Forte
    – Jim Hudson
    – Colleen Kehoe
    – K.K. Lamberty
    – Jose Zagal
  • Study participants, AniAniWeb adopters

Appendixes

• The slides that follow from this point are supplementary slides that clarify points that may come up during the presentation
Design Experiments: Five Crosscutting Features

• The purpose is to develop a class of theories about both the process of learning (becoming and belonging) and the means (reifying identity) that are designed to support that learning.
• They are highly interventionist—bring about new forms of learning in order to study them.
• They are a test-bed to both develop theories (about communities of practice) and to see if and how those theories are reflected in practice.
• They are a process of iterative design.
• The hope is to produce “humble” theories that inform prospective design (how to support reifying identity).

Design Experiments: Takeaways for this Research

• Research needs a minimal ontology for certain types of learning to occur (Barab and Squire, 2004)
• One contribution is the design narrative and thick description of the context to help future designers (Hoadley, 2002)
• Design experiments attempt to engineer innovative educational environments (Brown, 1992)
• The research needs to address questions of how well different innovations work and under what circumstances (Collins, 1992)
• Co-participant design and analysis (Collins, Joseph, and Bielaczyc, 2004)
• Reporting failure is important
• Ontological innovation (diSessa and Cobb, 2004)

Identity

• Identity can be viewed in many different ways (Gee, 2001)
  – Nature perspective
  – Institutional perspective: based on positions, granted by institutions
  – Discursive perspective: identity between people
  – Affinity perspective: the groups you align yourself with
How frequently do users do different activities?

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<tr>
<th>Activity</th>
<th>Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Often</th>
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<tbody>
<tr>
<td>School-related activities</td>
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<td>Work-related activities</td>
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<td>Distribute information</td>
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<td>Collect content</td>
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<td>Collecting links</td>
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Your home pages are useful to your...

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<td>Friends</td>
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<td>Strangers</td>
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<td>Others</td>
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How can we improve on current personal home pages?

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Why is this Learning Sciences Research?
• The focus is on learning as becoming and belonging
• Communities of practice are becoming important to learning sciences
• The development of the system is learner-centered, rather than user-centered
  – Learners have different needs than users
  – Some ideas are subversive to user needs

Why is this Computer Science Research?
• A computer science perspective
• A major focus of any design experiment is the design
• Computer science allows us to create new media (such as home pages) and tools